

spaced one-quarter inch inward from the jamb edge 52 closest to the hinge.

Crease lines 28 and 30 of the seal mark the inset edges of the attachment areas. This inset helps to conceal the seal by allowing the seal to be contained entirely within the door edge gap when the door is closed. The attachment areas may be considerably narrower or wider, as the thickness of the panel edge requires or permits. In addition, the attachment areas 16, 18 may be either equal or unequal in width, to suit the application.

The barrier portion 24 of the seal has a width that is a function of the hinge geometry. A typical door hinge 26 may have a one-half inch diameter cylinder, which is installed to be offset by one-quarter inch from the door. Thus, when the door is opened fully to a parallel position with the adjacent wall, as shown in FIG. 2, the door is spaced approximately one inch from the wall, and the hinge cylinder extends approximately one-quarter inch into the doorway. A barrier portion having a width of approximately one and three-fourths inches, installed as described in the prior paragraph, allows such full opening of the door without becoming stretched.

Further, when the door is closed and the barrier becomes folded in half at crease 32, the barrier extends into the door gap by no more than one-half its width, or seven-sixteenths inch. If required by hinge geometry or other factors, the barrier could be extended in width to the combined widths of the attachment areas, or three inches in this illustration. On the other hand, barrier portions as narrow as one inch have been made, which are capable of forming the thermal gradient reducer between panels having a thickness as little as one-half inch. Still narrower barrier portions are possible.

Although it has been identified that the barrier portion forms the thermal gradient reducer by becoming folded in the door edge gap, these folds are not required to be pre-formed in the plastic sheet material. A smooth, non-prefolded sheet tends to form folds 28, 30, 32 of larger radius than would a preformed plastic sheet. Such larger radius curves are better able to form the thermal gradient reducer in relatively wide door edge gaps, such as those of more than one-eighth inch. A pre-folded barrier portion offers the advantage of more reliably collapsing into the desired fold pattern as the door closes. In a door of typical gap, such as between one-eighth inch and one-sixteenth inch, either pre-folded or non-folded polyethylene sheets have been found to perform well.

The following examples illustrate specific methods of constructing the real, active, unbroken barrier seal.

Example 1. For a residential door one and three-fourths inches wide -- Necessary materials are clear or colored polyethylene 0.005 inches in thickness and double sided adhesive tape one and one-half inches wide. A strip of polyethylene four and three-fourths inches wide and eighty-four inches long is sufficient to make one seal.

The protective covering is removed from one side of a strip of the double sided adhesive tape. The exposed adhesive side of the tape is applied to one face of the polyethylene strip, adjacent to one of the long edges, for the full eighty-four inch length. A second strip of the tape is similarly applied along the opposite edge of the same face of the polyethylene.

The seal is applied beginning from the top inside corner formed by the door frame and molding. The polyethylene strip is centered over the hinge in a longi-

tudinally vertical position with the taped side facing the hinge. The protective covering is removed in convenient increments from the adhesive surface over the door frame, and the seal is attached to the hinge-mounting jamb by following the corner line. Then, the protective covering is similarly removed from the adhesive surface over the door hinge-edge, and the seal is attached by following the edge line furthest from the hinges. The installation is complete at this point. The seal will fold into the desired "W" configuration as the door is closed.

Example 2. Production of random length seal -- A strip of polyethylene sheet material having a width of four and one-half inches and any desired length is provided. Adhesive material is directly deposited on the strip, along a longitudinal path approximately one and one-half inches wide, adjacent each longitudinal edge of one face of the polyethylene. The strip is rolled lengthwise in the manner of twin rolls of tape, with the intermediate section approximately one and one-half inches wide being substantially free of adhesive.

The seal is applied by unrolling the adhesive strip in convenient increments while pressing the adhesive in place against the hinge-edge of the door and the adjacent hinge-mounting jamb. The edges of the seal are applied to follow the corner line of the jamb and the edge line of the door, as described above.

Example 3. Production of seal with pre-formed thermal gradient reducer -- A strip of flexible, resilient plastic sheeting having a width of approximately four and one-half inches is creased and folded upon itself along the longitudinal center-line to form a double layer of plastic sheeting two and one-fourth inches wide. Then, each layer of the sheeting is creased along a line located approximately three-fourths inch from the center fold, which corresponds to a line located approximately one and one-half inches from the free edge. On these side crease lines, the plastic sheeting is folded in the direction opposite that of the center fold. The resulting folded structure has two center layers that constitute a pre-formed thermal gradient reducer.

Adhesive is applied to the full width of the two outward facing surfaces of the folded structure. A protective, removeable cover may be placed over the adhesive to preserve it until the later installation of the seal.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be regarded as falling within the scope of the invention as defined by the claims that follow.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. In combination with a door hingedly mounted at one edge to a jamb and having a hinge-edge gap defined between respective facing hinge edges of the door and jamb, a flexible hermetical seal located within the gap and having at least two configurations responsive to relative open and closed pivotal positions of the door within the jamb, the first a relatively unfolded position closing the gap and the second a relatively more folded position forming a plurality of air columns within the gap, reducing thermal gradient across the gap, the seal comprising: